

## UNCLASSIFIED

<b>RDT&amp;E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)</b>								DATE <b>February 2002</b>	
BUDGET ACTIVITY <b>05 - Engineering and Manufacturing Development</b>				PE NUMBER AND TITLE <b>0604706F Life Support Systems</b>				PROJECT <b>412A</b>	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
412A Life Support Systems	16,253	9,208	925	274	266	2,767	2,804	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	Continuing	TBD

(U) **A. Mission Description**  
 This program provides for System Development and Demonstration (SDD) of life support equipment and subsystems to satisfy operational command requirements for improved life support equipment. There are five main projects in this PE. (1) The Aircrew Laser Eye Protection (ALEP) project provides aircrews with eye protection against a variety of laser devices which could cause temporary and permanent loss of vision. (2) The Fixed Aircrew Standardized Seat (FASS) Program seeks to evaluate and standardize seat systems and subsystems in non-ejection seat aircraft. (3) ACES II Ejection Seat improvement projects include the Cooperative Modification Program (CMP), Structural Upgrades and Digital Recovery Sequencer program, and Preplanned Product Improvements (P3I). (4) The Lightweight Environmentally Sealed Parachute Assembly (LESPA) is a lighter and thinner parachute than current equipment with a service life of 25 years and a 5-year repack cycle. (5) Panoramic Night Vision Goggles (PNVG) provide a greatly enhanced field of view over current night vision goggles. This PE also provides for the continuing development of life support items and subsystems such as, but not limited to, the following: flight helmets, oxygen breathing equipment for aviators, survival radio support equipment, night vision devices, active/passive noise reduction devices, aircraft seating, and parachutes. Program management support includes tasks to assess deficiencies of currently fielded equipment, provide for the transition of new technology into SDD, and support all current life support projects.

(U) **FY 2001 (\$ in Thousands)**

(U) \$4,000	Congressional Add for ACES II Ejection Seat Digital Sequencer and Aircrew Accommodations - Begin SDD
(U) \$3,700	Congressional Add for Fixed Aircrew Standardized Seats - Continue Seat Study/Begin CTD
(U) \$2,723	Continue Aircrew Laser Eye Protection CTD
(U) \$3,069	Complete ACES II Cooperative Modification Program SDD
(U) \$1,187	Continue ATAGS SDD and Production Support Costs
(U) \$1,005	Continue development of other Life Support items and subsystems
(U) \$569	Program Management/Technical Support/Travel/Test & Evaluation Support
(U) \$16,253	Total

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<p>(U) <b><u>A. Mission Description Continued</u></b></p> <p>(U) <u>FY 2002 (\$ in Thousands)</u></p> <p>(U) \$2,500 Congressional Add for Panoramic Night Vision Goggle Development - Begin SDD</p> <p>(U) \$1,500 Congressional Add for ACES II Ejection Seat P3I</p> <p>(U) \$700 Congressional Add for Lightweight Environmentally Sealed Parachutes (LESPA) - Begin Block II SDD</p> <p>(U) \$3,428 Begin ALEP SDD</p> <p>(U) \$672 Continue development of other Life Support items and subsystems such as ejection seats, anti-gravity suits, F-22 integration, night vision devices, and parachutes</p> <p>(U) \$408 Program Management/Technical Support/Travel/Test &amp; Evaluation Support</p> <p>(U) \$9,208 Total</p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$704 Continue ALEP SDD</p> <p>(U) \$100 Continue development of other Life Support items and subsystems such as ejection seats, anti-gravity suits, F-22 integration, night vision devices, and parachutes</p> <p>(U) \$121 Program Management/Technical Support/Travel/Test &amp; Evaluation Support</p> <p>(U) \$925 Total</p> <p>(U) <b><u>B. Budget Activity Justification</u></b></p> <p>Program is in Budget Activity 5 because several projects are in Acquisition Phase B, SDD</p> <p>(U) <b><u>C. Program Change Summary (\$ in Thousands)</u></b></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="text-align: center; width: 15%;"><u>FY 2001</u></th> <th style="text-align: center; width: 15%;"><u>FY 2002</u></th> <th style="text-align: center; width: 15%;"><u>FY 2003</u></th> <th style="text-align: center; width: 15%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">26,215</td> <td style="text-align: center;">4,586</td> <td style="text-align: center;">1,244</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">26,458</td> <td style="text-align: center;">4,586</td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>    a. Congressional/General Reductions</td> <td style="text-align: center;">-185</td> <td style="text-align: center;">-78</td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>    b. Small Business Innovative Research</td> <td style="text-align: center;">-546</td> <td></td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>    c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>    d. Below Threshold Reprogram</td> <td style="text-align: center;">583</td> <td></td> <td></td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>    e. Rescissions</td> <td style="text-align: center;">-10,057</td> <td></td> <td></td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table>				<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	26,215	4,586	1,244	TBD	(U) Appropriated Value	26,458	4,586		TBD	(U) Adjustments to Appropriated Value					a. Congressional/General Reductions	-185	-78		TBD	b. Small Business Innovative Research	-546			TBD	c. Omnibus or Other Above Threshold Reprogram				TBD	d. Below Threshold Reprogram	583			TBD	e. Rescissions	-10,057			TBD
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BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT		
<b>05 - Engineering and Manufacturing Development</b>	<b>0604706F Life Support Systems</b>						<b>412A</b>		
(U) <b><u>C. Program Change Summary (\$ in Thousands) Continued</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>					
(U) Adjustments to Budget Years Since FY 2002 PBR		4,700	-319	TBD					
(U) Current Budget Submit/FY 2003 PBR	16,253	9,208	925	TBD					
(U) <u>Significant Program Changes:</u>									
FY 2001 Congressional Adds: \$10.25M for JESP; \$4.0M for ACES II modifications; \$3.7M for Fixed Aircrew Standardized Seats									
FY 2002 Congressional Rescission: \$10M FY01 JESP funds									
FY 2002 Congressional Adds: \$2.5M for Panoramic Night Vision Goggle development; \$1.5M for ACES II P3I; \$700K for LESPA development									
FY 2003 Adjustments: -\$163K for Program Support; -\$156K for Life Support Program reduction									
(U) <b><u>D. Other Program Funding Summary (\$ in Thousands)</u></b>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) Items Less Than \$5M (Safety Equipment) PE 0702833F BPAC 842990: Advanced Technology Anti-G Suit (ATAGS)	550							0	550
(U) Items Less Than \$5M (Safety Equipment) PE 0702833F BPAC 842990: Aircrew Laser Eye Protection (ALEP)		2,800	4,520	3,920	1,400			0	12,640
(U) Items Less Than \$5M (Safety Equipment) PE 0702833F BPAC 842140: Panoramic Night Vision Goggles--FYDP Requirements TBD									

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DATE

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05 - Engineering and Manufacturing Development

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0604706F Life Support Systems

PROJECT

412A

(U) **E. Acquisition Strategy**

Acquisition strategy is carried out at the project level. (1) The ALEP program acquisition strategy consists of a full and open PDRR contract to two contractors as well as a full and open SDD contract with one to two contractors with a down select to one contractor for production. (2) The FASS program CTD effort will be awarded competitively through an Contract and Management Support contract. (3) The acquisition strategy for the ACES II P3I includes a sole source Cost Plus Fixed Fee contract for the drogue and seat modifications. (4) The LESPA effort will be accomplished through an existing Navy cost-type Basic Ordering Agreement (BOA) contract. (5) The PNVG SDD effort will be a full and open competition between technically viable competitors and subsequent award of a cost-type contract.

(U) **F. Schedule Profile**

	<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>			
	1	2	3	4	1	2	3	4	1	2	3	4		
(U) ACES II CMP Sled Test Completion					*									
(U) ACES II OT&E Completion								X						
(U) ACES II Digital Sequencer Qual Start						X								
(U) ACES II Structural Improvement Task							X							
(U) LESPA Development Block I Completion									X					
(U) FASS CTD Award						X								
(U) FASS DT&E/OT&E												X		
(U) ALEP SDD Contract Award						X								
(U) ALEP Complete DT&E												X		
(U) ALEP Complete IOT&E												X		
(U) ALEP Production Award										X				
(U) PNVG SDD Contract Award							X							
(U) PNVG Block I Production Award												X		

\* = completed event

X = planned event

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY					PE NUMBER AND TITLE				PROJECT	
05 - Engineering and Manufacturing Development					0604706F Life Support Systems				412A	
(U) A. Project Cost Breakdown (\$ in Thousands)										
					FY 2001		FY 2002		FY 2003	
(U)	Contracts				11,589		8,400		93	
(U)	Technical Engineering Support				1,362		405		350	
(U)	Travel				283		34		38	
(U)	Government Testing				2,219		0		222	
(U)	Program Management/Technical Support and Misc.				800		369		222	
(U)	Total				16,253		9,208		925	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
Contractor or Government		Contract Method/Type		Award or Obligation		Performing Activity		Project Office		Total Prior
Performing Activity		or Funding Vehicle		Date		EAC		EAC		to FY 2001
								Budget FY 2001		Budget FY 2002
								Budget FY 2003		Budget to Complete
										Total Program
Product Development Organizations										
UPCO-Inflatable Rest		SS/CPAF		Aug 99		2,053		2,053		2,157
Entran Devices-ACES II		FFP		Sep 99		39		39		39
Boeing-ACES II Struc Def		SS/CPFF		Dec 99		200		200		200
ATA Sensors-ACES II		FFP		Mar 00		31		31		31
Gemini Elect Co-ACES II		FFP		May 99		9		9		9
Denton, Inc-ACES II		FFP		Sep 99		47		47		47
First Tech Sys-ACES II		FFP		Oct 99		393		393		193
Boeing-ACES II --Study		SS/CPFF		Aug 99		237		237		237
Pioneer Aerospace-ACES II		FFP		Jan 99		9		9		9
EME Corp-ACES II		FFP		Mar 00		244		244		
ITT-NVS		C/CPIF		Jan 93		14,081		14,081		14,081
KRUG-ATAGS		SS/FFP		7 July 97		424		424		424
Mustang-ATAGS		SS/FFP		Sep 97		499		499		499
								903		

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BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT	
05 - Engineering and Manufacturing Development				0604706F Life Support Systems				412A	
(U) <u>Performing Organizations Continued:</u>									
<u>Product Development Organizations</u>									
ALEP - (AL/Navy)	C/CPFF	Jun 97	4,552	4,552	4,552			Continuing	TBD
MDA-Enhanced Drogue	SS/CPFF	Jun 97	1,130	1,130	1,130			Continuing	TBD
MDA-ACES II Seats	SS/FFP	Sept 97	150	150	150			Continuing	TBD
SRL-ATAGS DT&E Support	SS/CPFF	Dec 97	150	150	150			Continuing	TBD
Boeing-ACES II Pre-SDD	SS/CPFF	Feb 98	250	250	250			Continuing	TBD
Brooks AFB, Supply	Supply Reqt	Feb 98	311	311	311			Continuing	TBD
Contax	SS/FFP	Apr 98	11	11	11			Continuing	TBD
Boeing-ACES II SDD	SS/CPIF	Dec 98	5,004	5,004	6,747	1,187		Continuing	TBD
Boeing-ACES II SDD	SS/CPFF	Jun 00			412	236		Continuing	TBD
(Structural)									
BFG-UPCO through Hill AFB	TBD	Jan 01				3,227		Continuing	TBD
(ACES II)									
SEI - Vacuum Packed						507		Continuing	TBD
Parachute									
Pax River	AF 185	Aug 99	147	147				Continuing	TBD
Holloman AFB	AF 185	Nov 99	5	5				Continuing	TBD
ALEP CTD	CPFF	Sep 00	TBD	3,551	4,667	1,650		Continuing	TBD
ALEP SDD	TBD	TBD	TBD	4,252			3,700	93	Continuing
Fixed Seats	TBD				900	3,379			Continuing
Vista Technologies						396			396
Inflatable Restraints Early	C/CPIF	Sep 00	3,000	3,000	2,174				Continuing
SDD									
SAIC						1,306	405	350	Continuing
Martin-Baker - JESP			5,250	5,250	5,250				5,250
BF Goodrich/UPCO - JESP			5,250	5,250	5,250				5,250
PNVG SDD		TBD					2,500		2,500
ACES II P3I		TBD					1,500		1,500
Project 412A									
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(U) <b><u>Performing Organizations Continued:</u></b>											
<u>Product Development Organizations</u>											
LESPA Block II SDD		TBD						700		700	
Life Support Systems, TBD		TBD	TBD	2,500	2,500	1,586	160		Continuing	TBD	
<u>Support and Management Organizations</u>											
Program Management				5,601	5,601	3,247	800	369	222	Continuing	TBD
Support											
Travel				1,273	1,273	716	283	34	38	Continuing	TBD
Tech Eng & Acq				6,941	6,941	5,095					5,095
<u>Test and Evaluation Organizations</u>											
Edwards Test Facility		AF 185		100	100					Continuing	TBD
ALEP Testing Agency		TBD							222	Continuing	TBD
Fixed Seats Testing Agency		TBD	TBD								
AFOTEC						62				Continuing	TBD
46th Test Wing						64				Continuing	TBD
AFFTC		Proj		3,146	3,146	3,146	200			Continuing	TBD
		Ord-Various									
AL/CF		Various		179	179	179				Continuing	TBD
Navy Testing for Inflatable						173				Continuing	TBD
Holloman		Various		2,864	2,864	337	2,019			Continuing	TBD
AFRL (incl. Ejection Seat Effort)		Various		4,951	4,951	1,402				Continuing	TBD
(U) <b><u>Government Furnished Property:</u></b>											
		<u>Contract</u>									
		<u>Method/Type</u>	<u>Award or</u>								
<u>Item</u>		<u>or Funding</u>	<u>Obligation</u>	<u>Delivery</u>		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Description</u>		<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Property</u>											
ALEP			TBD			12	0	0		6	18
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(U) <u>Government Furnished Property Continued:</u>						
<u>Support and Management Property</u>						
<u>Test and Evaluation Property</u>						
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
<u>Subtotals</u>			<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Subtotal Product Development			51,478	12,951	8,805	443
Subtotal Support and Management			9,058	1,083	403	260
Subtotal Test and Evaluation			5,363	2,219		222
Total Project			65,899	16,253	9,208	925